CITY OF SOMERVILLE
CONTRIBUTORY RETIREMENT SYSTEM

Actuarial Valuation Report

January 1, 2007

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Report Summary:

Highlights	**January 1, 2004**	**January 1, 2007**
Contributions		
Funding Schedule FY 2008	$11,775,000	$11,775,000
Funding Schedule FY 2009	12,163,000	12,485,661
Funded Ratios		
GAS No. 25	59.1%	62.9%
Participants		
Actives	1,069	1,019
Retirees and Beneficiaries	803	745
Vested	0	0
Inactives	320	325
Disabled	124	127
Total	2,316	2,216
Payroll		
Payroll of Active Members	$43,875,838	$48,837,222
Average Payroll	41,044	47,927
Normal Cost		
Employer	2,216,878	2,346,030
Employee	3,557,008	4,015,896
Administrative Expenses	300,000	370,000
Total	6,073,886	6,731,926
Actuarial Accrued Liabilities		
Actives	103,890,868	117,421,713
Retirees, Beneficiaries, Disabilities and Inactives	140,274,940	149,032,309
Total	246,797,910	266,454,022
Actuarial Value of Assets	145,850,905	167,527,653
Unfunded Actuarial Accrued Liabilities	$100,947,005	$98,926,369

Introduction

This report presents the findings of an actuarial valuation as of January 1, 2007, of Somerville Contributory Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2007.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the City of Somerville Contributory Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2007.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the preceding 3 years, the total unfunded actuarial accrued liability increased by 4.5% to $105,522,911. The increase is the result of net unfavorable actuarial experience during the preceding year. The actuarial value of assets for the three year period had an average return of 6.64%. The actuarial (gains) and losses by sources are shown in the following table:

Investment	7,232,972
Salary	(3,498,786)
Retiree Mortality	(2,239,070)
Active Decrements (Retirement)	(2,948,921)
Active Decrements (Termination)	(1,590,398)
Active Decrements (Mortality)	134,908
Active Decrements (Disability)	128,295
New Participants	4,416,447
Other (Data corrections, Service Buybacks, etc.)	3,733,225
Total (gain)/loss	5,368,672

The Board adopted a change in the assumed salary increases. The change lowered the unfunded actuarial accrued liability by $6,596,542 to $98,926,369, and the Normal Cost by $334,408 to $6,731,926.

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Actuarial Costs and Liabilities:

Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

Table I

	January 1, 2004	January 1, 2007
Superannuation	$3,887,999	$4,375,032
Termination	536,123	671,698
Death	328,361	314,715
Disability	1,021,403	1,000,481
Administrative Expenses	300,000	370,000
Total Normal Cost	6,073,886	6,731,926
% of Pay	13.8%	13.8%
Employee Contributions	3,557,008	4,015,896
% of Pay	8.1%	8.2%
Employer Normal Cost	$2,516,878	$2,716,030
% of Pay	5.7%	5.6%

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Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits based on the past service of the actives and inactives. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

Table II

	January 1, 2004	January 1, 2007
Actives		
Superannuations	$96,002,128	$103,981,479
Termination	(1,577,390)	2,004,712
Death	3,105,415	3,640,361
Disability	6,360,715	7,795,161
Retirees and Inactives		
Retirees and Beneficiaries	112,678,833	115,015,435
Terminated (Refund)	2,632,102	5,299,316
Disabled	27,596,107	28,717,558
Total	$246,797,910	$266,454,022

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Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactive participants as well as all benefits earned and expected to be earned in the coming years by the active participants. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III

	January 1, 2004	January 1, 2007
Actives		
Superannuation	$131,128,755	$142,552,340
Termination	3,577,690	4,864,225
Death	6,073,743	6,210,281
Disability	14,925,286	16,698,344
Retirees and Inactives		
Retirees and Beneficiaries	112,678,833	115,015,435
Terminated (Refund)	2,632,102	5,299,316
Disabled	27,596,107	28,717,558
Total	$298,612,516	$319,357,499

Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

Table IV

	January 1, 2004	January 1, 2007
Cash equivalents	$22,121,971	$9,025,005
Short term investments	0	0
Fixed income securities	34,201,555	47,889,918
Equities	61,185,228	86,112,115
International	5,791,734	10,791,515
Real Estate	13,484,309	18,182,206
Venture Capital	0	0
Other	561,794	904,186
Accounts receivable	310,979	347,243
Accounts payable	(269,350)	(77,832)
Accrued income	101,008	103,077
Total Market Value	$137,489,228	$173,277,432
Total Actuarial Value	$145,850,905	$167,527,653

Actuarial Value of Assets

The actuarial value of assets is determined by projecting the actuarial value of assets as of the beginning of the prior plan year with the assumed rate of return during that year (8.25%) and accounting for deposits and disbursements with interest at the assumed rate of return. An adjustment is then applied to recognize the difference between the actual investment return and expected return over a five year period. This preliminary actuarial value is not allowed to differ from the market value of assets by more than 20%. The calculation of the actuarial value of assets as of January 1, 2007 is presented in Table V.

Table V

		January 1, 2007
(1)	Market value at January 1, 2006	$158,596,506
(2)	2006 Contributions	$17,441,579
(3)	2006 Benefit Payments	($19,981,405)
(4)	Net interest adjustment at 8.25% on (1), (2), and (3) to December 31, 2006	$12,979,444
(5)	Expected market value on January 1, 2007 (1) + (2) + (3) + (4)	$169,036,124
(6)	Actual market value on January 1, 2007	$173,277,432
(7)	2006 (Gain) / Loss	($4,241,308)
(8)	80% of 2006 (Gain) / Loss	($3,393,046)
(9)	2005 (Gain) / Loss	$3,984,147
(10)	60% of 2005 (Gain) / Loss	$2,390,488
(11)	2004 (Gain) / Loss	($7,012,405)
(12)	40% of 2004 (Gain) / Loss	($2,804,962)
(13)	2003 (Gain) / Loss	($9,711,298)
(14)	20% of 2003 (Gain) / Loss	($1,942,260)
(15)	Actuarial value on January 1, 2007, (6) + (8) + (10) + (12) + (14)	$167,527,653
(16)	but not less than 80% nor greater than 120% of (6)	$167,527,653
	Ratio of actuarial value to market value	96.68%

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Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

Table VI

	January 1, 2004	January 1, 2007
Actuarial Accrued Liability	$246,797,910	$266,454,022
Actuarial Assets	145,850,905	167,527,653
Unfunded Actuarial Accrued Liability	$100,947,005	$98,926,369
Funded Status	59.1%	62.9%

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Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2028, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the unfunded actuarial accrued liability by June 30, 2022
  $ 91,035,938 over 15 years with 4.0% increasing payments
- Level amortization of the 2002 Early Retirement Incentive by June 30, 2019
  $ 4,832,995 over 12 years
- Increasing amortization of the 2003 Early Retirement Incentive by June 30, 2020
  $ 3,057,436 over 13 years
- Interest adjustment for payments deposited at the beginning of the fiscal year.

The pension appropriation is shown in Table VII.

Table VII

	January 1, 2004	January 1, 2007
Normal cost	$2,516,878	$2,716,030
Amortization payment of the accrued liability	6,791,084	7,914,083
Amortization payment of 2002 ERI liability	696,694	600,135
Amortization payment of 2003 ERI liability	2,031,462	362,280
Total cost	$12,036,118	$11,592,528
% of Pay	27.4%	23.7%
Fiscal 2008 cost	$11,775,000	$11,775,000
Fiscal 2009 cost	$12,163,000	$12,485,661

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.5% per year. The employee contribution rate is expected to increase to 10.5% by 2028 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be made at the beginning of the year.

The employer total cost is expected to increase during the next 16 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents 24.5% of payroll, decreasing to 19.9% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of about 3.4% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

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Appropriation Forecast

Fiscal Year Ending	Payroll*	Employee Contribution	Employer Normal Cost with Interest	Amortization Payments with Interest	Employer Total Cost with Interest	Employer Total Cost % of Payroll	Funded Ratio %**
2008	$48,837,222	$4,015,896	$2,825,846	$8,949,154	$11,775,000	24.1	62.8
2009	$51,034,897	$4,254,714	$2,892,557	$9,593,104	$12,485,661	24.5	66.1
2010	$53,331,467	$4,506,893	$2,959,550	$9,936,775	$12,896,325	24.2	69.3
2011	$55,731,383	$4,773,153	$3,026,715	$10,294,193	$13,320,908	23.9	72.4
2012	$58,239,296	$5,054,250	$3,093,932	$10,665,908	$13,759,840	23.6	75.3
2013	$60,860,064	$5,350,979	$3,161,068	$11,052,491	$14,213,559	23.4	78.1
2014	$63,598,767	$5,664,180	$3,227,982	$11,454,538	$14,682,520	23.1	80.7
2015	$66,460,711	$5,994,733	$3,294,518	$11,872,666	$15,167,184	22.8	83.3
2016	$69,451,443	$6,343,566	$3,360,504	$12,307,520	$15,668,024	22.6	85.7
2017	$72,576,758	$6,711,654	$3,425,758	$12,759,767	$16,185,525	22.3	88.1
2018	$75,842,712	$7,100,024	$3,490,080	$13,230,105	$16,720,185	22.0	90.3
2019	$79,255,634	$7,509,757	$3,553,254	$13,719,256	$17,272,510	21.8	92.5
2020	$82,822,138	$7,941,988	$3,615,046	$13,603,573	$17,218,619	20.8	94.6
2021	$86,549,134	$8,397,913	$3,675,204	$13,755,711	$17,430,915	20.1	96.5
2022	$90,443,845	$8,878,788	$3,733,455	$14,305,940	$18,039,395	19.9	98.3
2023	$94,513,818	$9,385,936	$3,789,507	$0	$3,789,507	4.0	100.0
2024	$98,766,940	$9,920,749	$3,843,043	$0	$3,843,043	3.9	100.0
2025	$103,211,452	$10,484,687	$3,893,724	$0	$3,893,724	3.8	100.0
2026	$107,855,968	$11,079,291	$3,941,184	$0	$3,941,184	3.7	100.0
2027	$112,709,486	$11,706,178	$3,985,031	$0	$3,985,031	3.5	100.0
2028	$117,781,413	$12,367,048	$4,024,843	$0	$4,024,843	3.4	100.0
2029	$123,081,577	$12,923,566	$4,205,961	$0	$4,205,961	3.4	100.0
2030	$128,620,248	$13,505,126	$4,395,229	$0	$4,395,229	3.4	100.0
2031	$134,408,159	$14,112,857	$4,593,014	$0	$4,593,014	3.4	100.0
2032	$140,456,526	$14,747,935	$4,799,700	$0	$4,799,700	3.4	100.0
2033	$146,777,070	$15,411,592	$5,015,686	$0	$5,015,686	3.4	100.0
2034	$153,382,038	$16,105,114	$5,241,392	$0	$5,241,392	3.4	100.0
2035	$160,284,230	$16,829,844	$5,477,255	$0	$5,477,255	3.4	100.0
2036	$167,497,020	$17,587,187	$5,723,731	$0	$5,723,731	3.4	100.0
2037	$175,034,386	$18,378,611	$5,981,299	$0	$5,981,299	3.4	100.0
2038	$182,910,933	$19,205,648	$6,250,458	$0	$6,250,458	3.4	100.0
2039	$191,141,925	$20,069,902	$6,531,728	$0	$6,531,728	3.4	100.0

* Calendar basis

** Beginning of Fiscal Year

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GASB Statements No. 25 and No. 27

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to $0. The required disclosure information is shown in Table VIII.

Table VIII

		January 1, 2004	January 1, 2007
(1)	Actuarial Accrued Liability	$246,797,910	$266,454,022
(2)	Actuarial Value of Assets	145,850,905	167,527,653
(3)	Unfunded Actuarial Accrued Liability	100,947,005	98,926,369
(4)	Funded Ratio (2)/(1)	59.1%	62.9%
(5)	Covered Payroll	$43,875,838	$48,837,222
(6)	UAAL as a percentage of payroll: (3)/(5)	230.1%	202.6%
(7)	Annual Required Contribution (ARC)	$11,399,440	$11,775,000
(8)	Net Pension Obligation	$0	$0

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PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Buck Consultants as of January 1, 2007.

The normal cost for employees on that date was:	$4,015,896	8.2% of pay
The normal cost for the employer was:	2,346,030	4.8% of pay

The actuarial liability for active members was:	$117,421,713
The actuarial liability for retired and inactive members was:	149,032,309
Total actuarial accrued liability:	266,454,022
System assets as of that date:	167,527,653
Unfunded actuarial accrued liability:	$98,926,369

The ratio of system's assets to total actuarial liability was 62.9%

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	8.25%
Rate of Salary Increase:	4.25%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a percent of Covered Payroll (b-a)/c
01/01/07	$167,527,653	$266,454,022	$98,926,369	62.9%	$48,837,222	202.6%
01/01/04	145,850,905	246,797,910	100,947,005	59.1%	43,875,838	230.1%
01/01/01	134,378,449	204,557,523	70,179,074	65.7%	44,779,084	156.7%
01/01/98	103,343,920	168,736,337	65,392,417	61.2%	38,969,295	167.8%
01/01/95	67,754,043	127,119,756	59,365,713	53.3%	31,711,990	187.2%
01/01/92	58,351,419	115,469,624	57,118,205	50.5%	28,547,090	200.1%
01/01/87	36,135,000	91,470,000	55,335,000	39.5%	22,342,000	247.7%

Attach Copy of Current Approved Funding Schedule

EXHIBITS

P:\Actrl\Somer\Val07\[ACT1.XLS]Actives

Age/Service Distribution with Salary as of January 1, 2007

Attained Age	Average Salary	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
20-24	22	0	0	0	0	0	0	0	0	0	22
	32,857	0	0	0	0	0	0	0	0	0	32,857
25-29	39	7	0	0	0	0	0	0	0	0	46
	34,172	39,800	0	0	0	0	0	0	0	0	35,029
30-34	37	27	1	1	0	0	0	0	0	0	66
	43,352	52,810	48,711	68,462	0	0	0	0	0	0	47,683
35-39	30	32	18	4	0	0	0	0	0	0	84
	38,625	50,684	60,624	42,081	0	0	0	0	0	0	48,097
40-44	47	40	33	26	8	1	0	0	0	0	155
	40,610	43,730	55,187	61,824	71,216	58700	0	0	0	0	49,774
45-49	37	42	33	40	32	3	0	0	0	0	187
	32,444	35,006	42,912	58,517	62,583	59,138	0	0	0	0	46,030
50-54	32	33	35	13	32	22	6	0	0	0	173
	32,254	33,010	42,461	36,069	58,344	77,096	70,961	0	0	0	46,621
55-59	20	25	18	25	21	24	21	6	0	0	160
	27,344	31,618	35,344	40,372	44,094	69,543	63,906	60,133	0	0	45,504
60-64	9	13	12	12	10	5	18	6	2	0	87
	37,303	31,980	32,655	41,360	35,564	62,441	67,948	76,110	54704	0	47,088
65-69	4	6	4	6	1	3	0	2	0	0	26
	26,640	19,977	30,295	32,552	40,226	58096	0	65,691	0	0	34,185
70+	1	4	3	0	0	3	0	1	1	0	13
	51,377	10,141	18558	0	0	42,388	0	16923	44,645	0	25,873
Total Employees	278	229	157	127	104	61	45	15	3	0	1,019
Average Salary	35,972	39,309	45,021	50,037	55,396	69,097	66,463	64,384	51,351	0	45,645

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Retiree Distribution as of January 1, 2007

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	0	1	1	0	1,571	1,571
45-49	2	3	5	73,107	40,454	113,561
50-54	8	6	14	141,819	38,299	180,118
55-59	44	25	69	1,750,558	402,069	2,152,627
60-64	46	42	88	1,594,122	502,286	2,096,409
65-69	47	49	96	1,221,969	669,588	1,891,557
70-74	39	65	104	965,039	908,935	1,873,974
75-79	69	69	138	1,379,286	889,989	2,269,276
80-84	69	65	134	1,061,736	435,213	1,496,949
85-89	27	45	72	277,953	422,183	700,136
90-94	12	10	22	85,817	82,331	168,148
95-99	7	5	12	18,909	15,610	34,519
Total	370	385	755	8,570,316	4,408,530	12,978,846
Average (Age/Payment)	73.2	74.5	73.9	23,163	11,451	17,191
Frequency Percent	49	51	100	66	34	100

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Disabled Retiree Distribution as of January 1, 2007

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	1	0	1	30,646	0	30,646
40-44	4	0	4	116,209	0	116,209
45-49	2	0	2	49,517	0	49,517
50-54	12	2	14	317,354	55,328	372,682
55-59	19	1	20	484,723	53,354	538,076
60-64	18	1	19	552,101	10,049	562,149
65-69	20	1	21	524,494	28,246	552,740
70-74	15	1	16	325,333	11,739	337,073
75-79	18	0	18	370,640	0	370,640
80-84	11	0	11	201,053	0	201,053
85-89	2	0	2	36,199	0	36,199
90-94	0	0	0	0	0	0
95-99	0	0	0	0	0	0
Total	122	6	128	3,008,268	158,716	3,166,984
Average (Age/Payment)	66.2	60.1	65.9	24,658	26,453	24,742
Frequency Percent	95.3	4.7	100	95	5	100

EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2007	$6,477,706	$4,015,896	$11,775,000	$14,240,204	$23,553,394
2008	6,859,207	4,254,714	12,485,661	15,901,721	25,782,890
2009	7,256,493	4,506,893	12,896,325	18,031,368	28,178,094
2010	7,748,241	4,773,153	13,320,908	20,355,679	30,701,499
2011	8,279,866	5,054,250	13,759,840	22,887,478	33,421,702
2012	8,788,543	5,350,979	14,213,559	25,645,588	36,421,583
2013	9,319,160	5,664,180	14,682,520	28,651,310	39,678,850
2014	9,909,824	5,994,733	15,167,184	31,924,386	43,176,479
2015	10,517,908	6,343,566	15,668,024	35,486,421	46,980,103
2016	11,094,862	6,711,654	16,185,525	39,364,674	51,166,992
2017	11,745,512	7,100,024	16,720,185	43,586,582	55,661,279
2018	12,385,198	7,509,757	17,272,510	48,180,986	60,578,055
2019	13,044,709	7,941,988	17,218,619	53,156,310	65,272,209
2020	13,744,885	8,397,913	17,430,915	58,528,662	70,612,606
2021	14,423,277	8,878,788	18,039,395	64,359,183	76,854,089
2022	15,072,324	9,385,936	3,789,507	70,103,719	68,206,837
2023	15,750,579	9,920,749	3,843,043	75,714,765	73,727,978
2024	16,459,355	10,484,687	3,893,724	81,780,789	79,699,845
2025	17,200,026	11,079,291	3,941,184	88,338,962	86,159,411
2026	17,974,027	11,706,178	3,985,031	95,429,505	93,146,686
2027	18,782,859	12,367,048	4,024,843	103,095,939	100,704,971
2028	19,628,087	12,923,566	4,205,961	111,379,692	108,881,132
2029	20,511,351	13,505,126	4,395,229	120,336,880	117,725,884
2030	21,434,362	14,112,857	4,593,014	130,022,613	127,294,122
2031	22,398,908	14,747,935	4,799,700	140,496,525	137,645,252
2032	23,406,859	15,411,592	5,015,686	151,823,153	148,843,572
2033	24,460,168	16,105,114	5,241,392	164,072,333	160,958,671
2034	25,560,875	16,829,844	5,477,255	177,319,639	174,065,862
2035	26,711,115	17,587,187	5,723,731	191,646,858	188,246,662
2036	27,607,637	18,378,611	5,981,299	207,154,850	203,907,124

amounts in thousands

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2007, and does not take into account any subsequent changes.

1. Administration

Each of the 107 contributory retirement systems for public employees of the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

(i) Group 1: Most general employees in State and local government

(ii) Group 2: Certain specified hazardous duty positions

(iii) Group 3: State police officers and inspectors

(iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

3. Salary

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. Member Contributions

Member contributions vary depending upon date hired as follows:

Date of Hire	Member Contribution Rate
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of $30,000

5. Average Salary

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.)

6. Creditable Service

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. Service Retirement

a. Eligibility:

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

(i) completion of 20 years of service

(ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member

(iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table:

Age at Retirement	Percentage of Average Salary Group 1	Group 2	Group 4
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

8. Deferred Vested Retirement

a. Eligibility:

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

b. Benefit Amount:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. Refund of Contributions:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. Accidental Disability

a. Eligibility:

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. Benefit Amount:

The accidental disability amount is 72% of annual salary plus $450 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability

a. Eligibility:

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55. If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55, he will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits

a. Occupational Death:

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of $250 per month to the surviving spouse, plus $120 for the first child, plus $90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of $250 per month plus $120 for the first child and $90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. Cost-of-Living Increases

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is $12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

(i) Option A – Life annuity

(ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member

(iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. Member Data

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. Valuation Date

January 1, 2007.

3. Actuarial Cost Method

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. Rate of Investment Return

It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.25% per annum.

5. Salary Scale

It is assumed that salaries including longevity will increase at 4.25% per year.

6. Cost-of-Living Increases

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and $12,000 per year.

7. Value of Investments

Assets held by the fund are valued at market value as reported by the Public Employees' Retirement Administration Commission (PERAC). The actuarial value of assets is determined using a five-year smoothing of asset returns greater than or less than the assumed rate of return.

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

Service	General Employees	Police and Fire Employees
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both pre-retirement and post retirement mortality are represented by the RP-2000 Mortality Table for males and females. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages:

Age	Male General Employees	Female General Employees	Male and Female Police and Fire Employees
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

11. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

Attained Age	General Employees	Police and Fire Employees
20	0.0001	0.0001
30	0.0003	0.0003
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 40% of all disabilities are ordinary (60% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

12. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

13. Administrative Expenses

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for fiscal year 2008 is $370,000 and is anticipated to increase at 4.5% per year.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. Actuarial Accrued Liability

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

3. Actuarial Cost Method

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

4. Actuarial Present Value

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. Forecast

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. Normal Cost

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. Unfunded Actuarial Accrued Liability

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. Valuation Method

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

9. Vested Liability

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the City of Somerville Retirement System contributing as of January 1, 2007, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Buck Consultants, LLC

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Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 05-4086

November 2007